

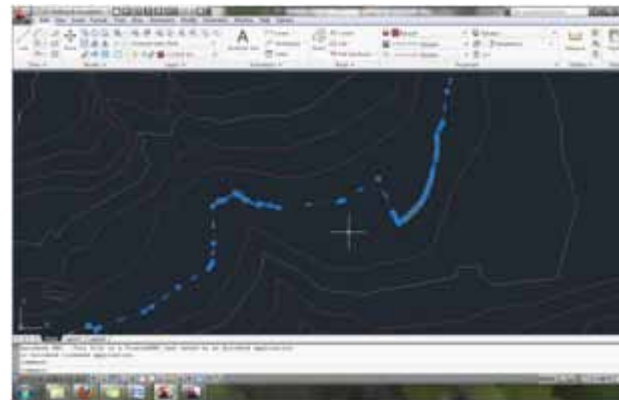
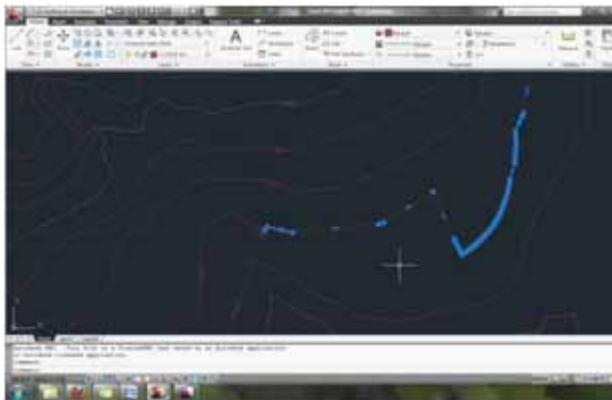
BUILDING A SITE MODEL IN REVIT

ABSTRACT

While SketchUp is the preferred method of 3D modeling for landscape architects Revit is further developed for use in BIM applications. Even though BIM is not Revit it saves time and frustration if all disciplines can work in one model and minimize switching between programs. The following series of screenshots will walk you through creating a topography surface with materials applied to hardscape and softscape elements.

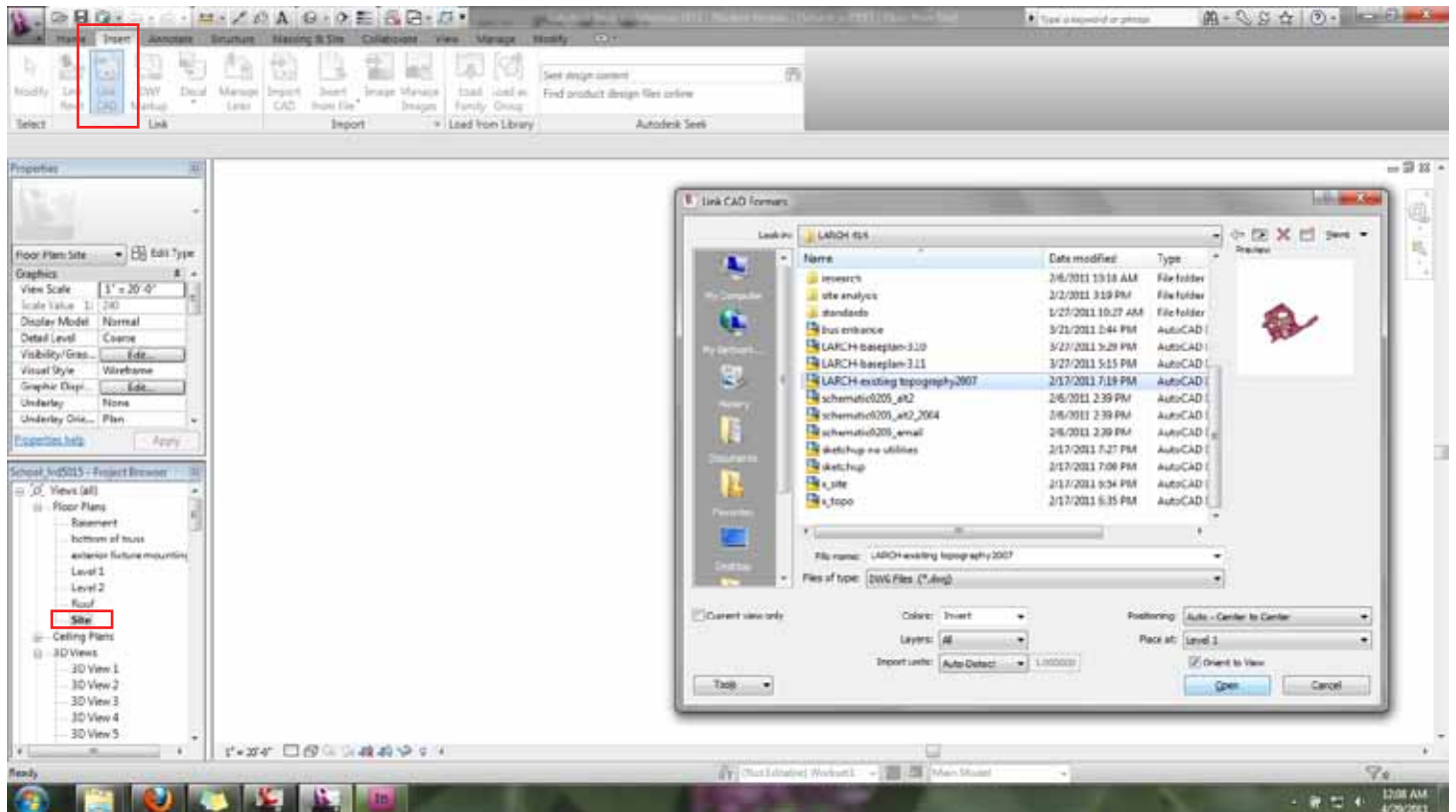
EXISTING TOPOGRAPHY

1. After receiving existing topography, the drawing needs to be cleaned up in AutoCAD. The numbers need to be deleted, fragmented contour lines need to be joined into continuous polylines and elevations need to be assigned to each contour in the properties tab.

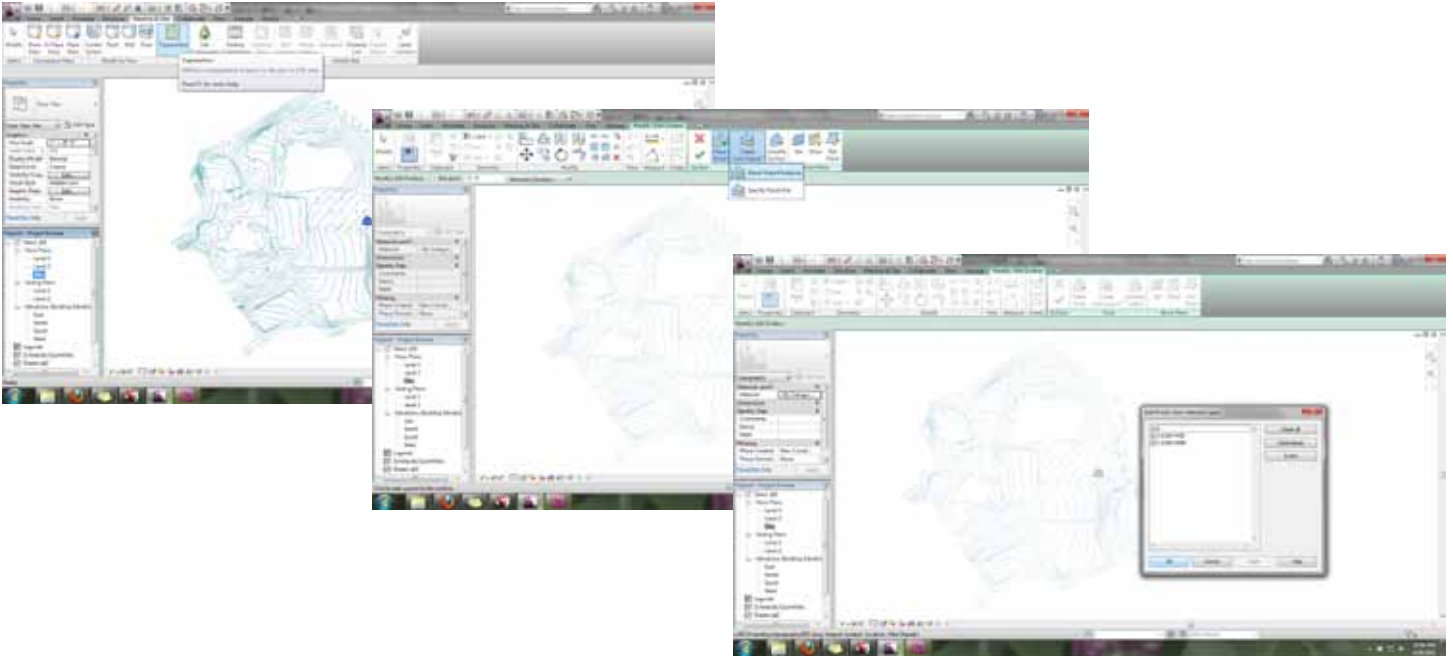


2. These polylines can be brought into Revit as a standard .dwg file and converted to a topography surface. A couple things to remember before clicking ok:

LINK CAD allows you to update your drawing within Revit easily
when inserting the contours you must be in the SITE floor plan view

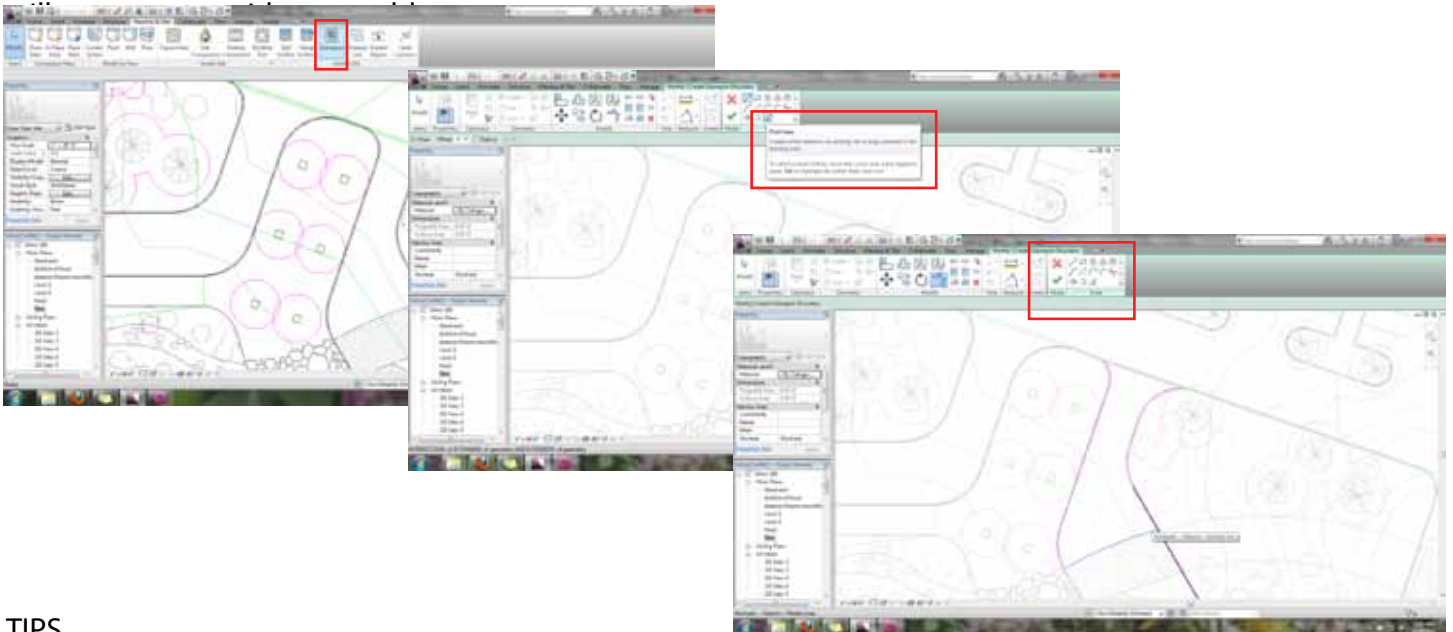


3. Left click on the AutoCAD file and then select TOPOSURFACE under the MASSING & SITE TAB. SELECT IMPORT INSTANCE and then left click in the drawing window. Lastly, check the contour layers and select OK. Then select the large green check mark to finish the surface.



PROPOSED TOPOGRAPHY

1. Create contours in AutoCAD and assign elevations to polylines as before and then bring these contours into Revit completing the same process of creating a TOPOSURFACE. In addition you can LINK CAD your site design. dwg while on the SITE floor plan to use as a modeling aid.
2. Once you have this surface you can use the SUBREGION tool to integrate the site plan with the toposurface so the paths and planting plants follow the contours. The PICK LINE option works best as you can select your AutoCAD lines. After an entire loop has been completed click the green check, the program

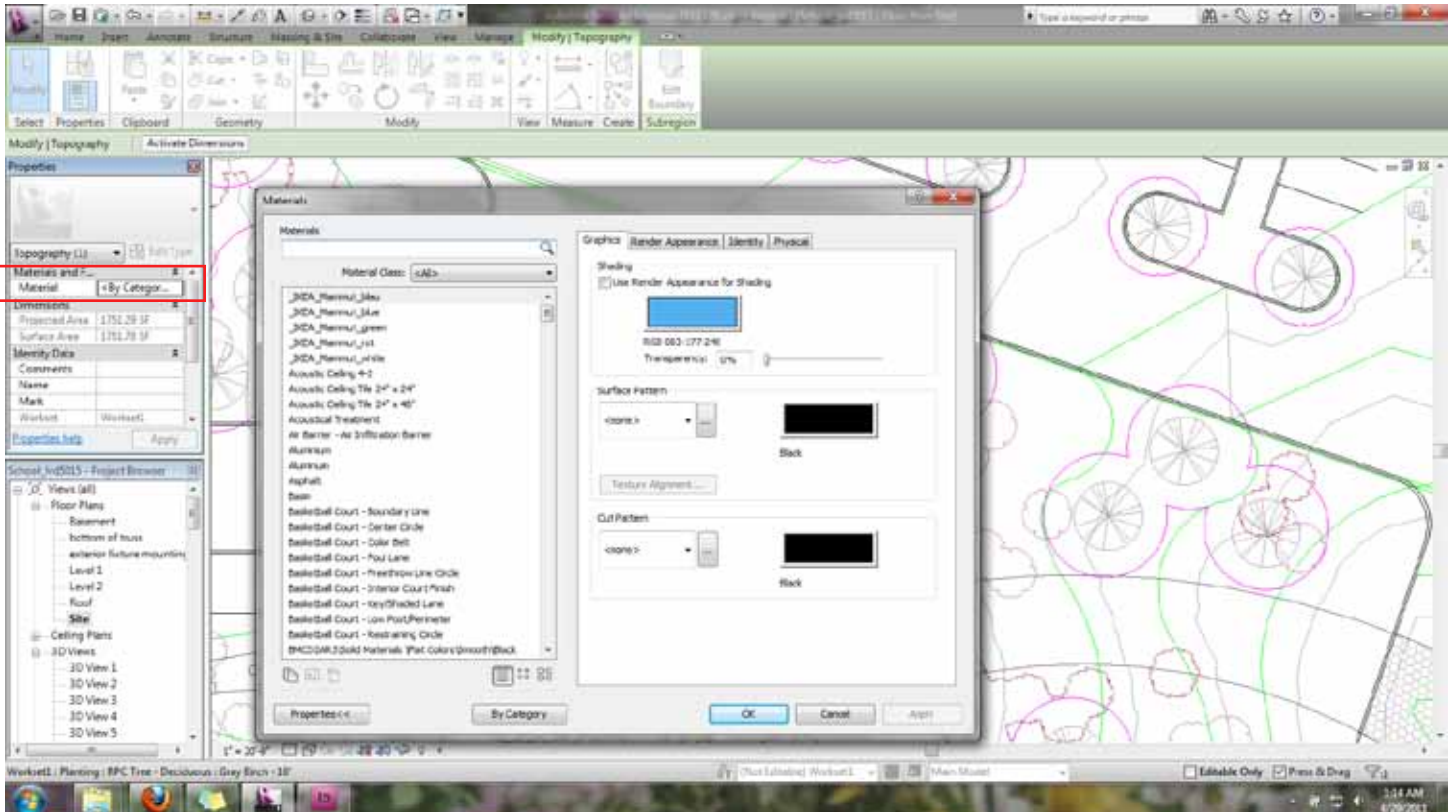


TIPS

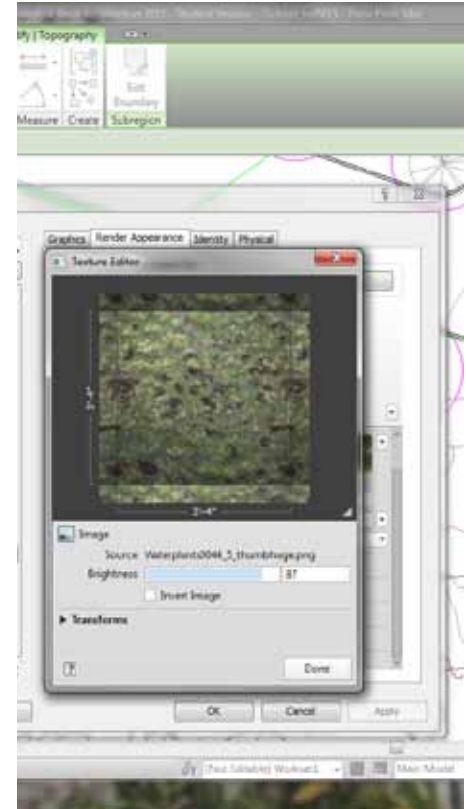
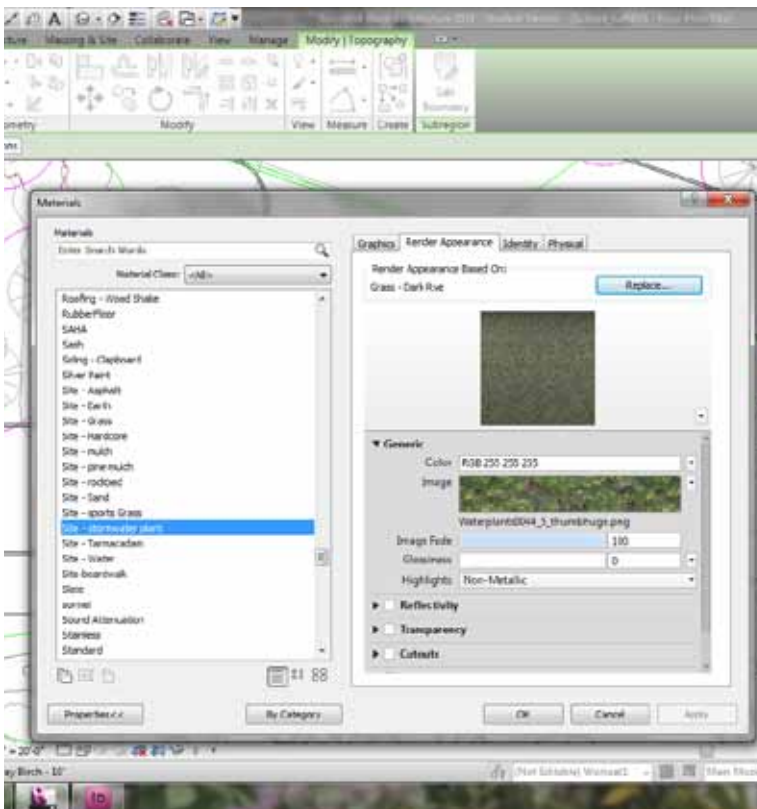
- after selecting the lines the TRIM/EXTEND tool can help close any gaps faster
- subregions cannot overlap so it is useful to offset closed polylines in AutoCAD by an 1" or so
- otherwise you will have to draw additional lines in Revit using the toolbox on the far right

ASSIGNING MATERIALS

1. Left click on the new subregion. In the PROPERTIES tab on the far left select the pulldown menu for MATERIAL. An extensive list will appear, select one that is close to what you are looking for.



2. If you would like to edit the material simply select the RENDER APPEARANCE tab. If you select the image you can put any .png image file in and adjust the size by using the TRANSFORM pull down.



REFLECTIONS

In conclusion, I would like to share a few of the things I found most frustrating about using Revit as a landscape architect. For our group the building was modeled in Revit long before the site and it was, therefore inaccurate to establish the exact building finish floor elevation when the topography was added. The problem is that once the building has been modeled it is cumbersome to adjust the levels to suit the topography. Therefore, currently you have to move the topography surface up and down in a sectional view until it appears accurate. While creating the subregions you have to select many line segments since Revit does not utilize layers; if you could isolate a layer that includes just your paths and use a selection window to select all paths at once the process would move faster. Finally, a graphics concern, the model view of vegetation makes it difficult to differentiate tree species - even a simple 2D view of the tree form would be better than the generic gray blobs currently provided. An improvement to this default view would allow them to be used in the sectional view rather than requiring that more visually appealing trees be photoshopped in afterwards.